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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,028	03/30/2004	Jobst Ulrich Gellert	2107.0650001/TUM/RLP	2797
26111	7590	07/25/2006	EXAMINER	
STERNE, KESSLER, GOLDSTEIN & FOX PLLC 1100 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005			EWALD, MARIA VERONICA	
			ART UNIT	PAPER NUMBER
			1722	

DATE MAILED: 07/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/812,028	<b>Applicant(s)</b> GELLERT ET AL.	
	<b>Examiner</b> Maria Veronica D. Ewald	<b>Art Unit</b> 1722	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 27 June 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 24-32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/6/04</u> .  | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Election/Restrictions*

13. Claims 24 – 32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on June 27, 2006.

### *Claim Rejections - 35 USC § 102*

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 – 9, 11 – 13, 16 – 23 are rejected under 35 U.S.C. 102(b) as being anticipated by Schmidt (U.S. 4,705,473). Schmidt teaches an injection molding apparatus, comprising: a manifold (item 44 – figure 1), including a junction component having an axial bore with a first end opening to an exterior surface of said manifold (item 94 – figure 1), and at least one radial bore in fluid communication with the axial bore and having at least one opening to an outer surface of said junction component (item 98 – figure 1; column 3, lines 55 – 62), and at least one pipe, wherein said at least one pipe has a first end that engages said at least one opening of said radial bore (item 50 – figure 1; column 3, lines 5 – 12); and a nozzle defining a nozzle channel in fluid communication with said at least one pipe (item 10 – figure 1), wherein said junction

Art Unit: 1722

component and said at least one pipe are fixed within a block that defines said manifold and wherein said junction component and said at least one pipe define a manifold channel for directing the flow of a melt material through said manifold and into said nozzle (figure 1; column 3, lines 5 – 10, 55 – 65); wherein said block is a cast block (column 3, lines 5 – 10); wherein said at least one pipe has at least one bend (item 50 – figure 1); and wherein the at least one pipe of the manifold further includes: at least one radial pipe having a first end engaging said junction component (item 50 – figure 1), and at least one nozzle pipe having a first end engaging a second end of said radial pipe (item 124 – figure 1).

With respect to claims 5 – 9, the reference further teaches wherein one of said first end of said nozzle pipe or said second end of said radial pipe is telescopically slidable inside the other, whereby the distance between said junction component and said nozzle is adjustable prior to casting (column 3, lines 5 – 10; column 4, lines 45 – 60); wherein the manifold further includes: at least one support pillar component fixed within said block, said support pillar component defining an axial bore and extending a height of said manifold (item 56 – figure 1); and a valve pin extending and retracting through said manifold via said axial bore of said support pillar component and into said nozzle channel (item 60 – figure 1); wherein said valve pin is connected to an actuation unit disposed outside of said manifold (item 72 – figure 1; column 3, lines 30 – 35); wherein said support pillar component is coupled to said at least one pipe (figure 1); wherein said manifold further includes a heating element fixed within said block (item 48 – figure 1; column 3, lines 67 – 68; column 4, lines 1 – 5).

With respect to claims 11 – 13, the reference also teaches that the heating element is a coil surrounding a configuration of at least said junction component engaged with said at least one pipe; wherein said heating element is a coil wrapping at least one full time around said at least one pipe and wherein said manifold further includes a plurality of heating elements (column 3, line 68; column 4, lines 1 – 5).

With respect to claims 16 – 20, Schmidt further teaches that the at least one pipe is made of stainless steel (column 3, lines 5 – 10); wherein said block is made from a soft thermally conductive metal and wherein said block is made from a material selected from the group consisting of copper, copper alloys, bronze, brass, aluminum, aluminum alloys, steel, steel alloys, and combinations thereof (column 3, lines 5 – 10); wherein said junction component and said support pillar are made from a tool steel with a high melting point (column 3, lines 5 – 10, 55 – 60); wherein at least one of said junction component and said support pillar component are made from H13 tool steel (column 3, lines 5 – 10, 55 – 60).

With respect to claims 21 – 23, Schmidt also teaches that the junction component includes a plurality of radial bores defining a plurality of openings to the outer surface of said junction component and wherein said manifold further includes a plurality of pipes, such that each of said plurality of pipes is fluidly connected to one of said plurality of openings (figure 1; column 2, lines 39 – 42; column 3, lines 5 – 10; column 4, lines 45 – 55); wherein said junction component is in fluid communication with a sprue bushing (item 94 – figure 1) and wherein said junction component is a sprue bushing (item 96 – figure 1).

Claims 1 – 5, 9, 11 – 13, 14 – 15, 17 – 18, 21 – 23, are rejected under 35 U.S.C. 102(b) as being anticipated by Gunther (U.S. 5,295,806). Gunther teaches an injection molding apparatus, comprising: a manifold (item 12 – figure 1), including a junction component having an axial bore with a first end opening to an exterior surface of said manifold (item 35 – figure 1), and at least one radial bore in fluid communication with the axial bore and having at least one opening to an outer surface of said junction component (item 34 – figure 1), and at least one pipe, wherein said at least one pipe has a first end that engages said at least one opening of said radial bore (item 32 – figure 1; column 3, lines 35 – 40); and a nozzle defining a nozzle channel in fluid communication with said at least one pipe (column 3, lines 50 – 55), wherein said junction component and said at least one pipe are fixed within a block that defines said manifold and wherein said junction component and said at least one pipe define a manifold channel for directing the flow of a melt material through said manifold and into said nozzle (figure 1); wherein said block is a cast block (column 3, lines 35 – 40); wherein said at least one pipe has at least one bend (item 32 – figure 1; column 3, lines 48 – 55); and wherein the at least one pipe of the manifold further includes: at least one radial pipe having a first end engaging said junction component (figure 1), and at least one nozzle pipe having a first end engaging a second end of said radial pipe (figure 1; column 3, lines 48 – 55); wherein one of said first end of said nozzle pipe or said second end of said radial pipe is telescopically slidable inside the other, whereby the

distance between said junction component and said nozzle is adjustable prior to casting (column 3, lines 48 – 60).

With respect to claims 9 and 11 – 13, Gunther further teaches that the manifold includes a heating element fixed within said block (item 38 – figure 1); wherein the heating element is a coil surrounding a configuration of at least said junction component engaged with said at least one pipe; wherein said heating element is a coil wrapping at least one full time around said at least one pipe and wherein said manifold further includes a plurality of heating elements (column 3, line 68; column 4, lines 1 – 5).

With respect to claims 14 – 15, Gunther also teaches that the manifold further includes: at least one branching junction component having an axial bore with a first end engaging a second end of said at least one pipe and at least one radial bore in fluid communication with said axial bore with at least one opening to an outer surface of said branching junction component, and at least one branching pipe, wherein said at least one branching pipe has a first end that engages said at least one opening of said radial bore of the branching junction component and wherein said junction component and said branching junction component support said at least one pipe and said at least one branching pipe before, during and after said manifold is cast (figure 1; column 3, lines 48 – 60).

With respect to claims 17 – 18, the reference further teaches that the block is made from a soft thermally conductive metal and wherein said block is made from a soft thermally conductive metal and wherein said block is made from a material selected

Art Unit: 1722

from the group consisting of copper, copper alloys, bronze, brass, aluminum, aluminum alloys, steel, steel alloys, and combinations thereof (column 3, lines 35 – 42).

With respect to claims 21 – 23, the reference also teaches that the junction component includes a plurality of radial bores defining a plurality of openings to the outer surface of said junction component and wherein said manifold further includes a plurality of pipes, such that each of said plurality of pipes is fluidly connected to one of said plurality of openings (figure 1; column 3, lines 28 – 34, 48 – 60); wherein said junction component is in fluid communication with a sprue bushing (item 35 – figure 1) and wherein said junction component is a sprue bushing (figure 1).

### ***Claim Rejections - 35 USC § 103***

15. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmidt or Gunther in view of Yu (U.S. 6,544,027). Schmidt and Gunther teach the characteristics previously described but do not teach that the heating element comprises copper; however, this is an obvious modification and known to one of ordinary skill in the art.

For example, in a manifold of an injection molding machine, Yu teaches a heated manifold into which a heating wire is inserted to ensure that the plastic melt remains in



Art Unit: 1722

its molten state. The heating wire has an upper end, which is closed by a finishing material made of copper, because copper has excellent thermal conductivity (column 2, lines 1 – 5). The thermal conductivity of the copper allows even heat transfer throughout the manifold and thus, to the plastic melt itself.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the Applicant's invention to modify the heating element(s) of either Schmidt or Gunther, such that the heating element is comprised of copper wire, for the purpose of allowing even heat transfer throughout the manifold and thus, to the plastic melt itself due to the excellent thermal conductivity of copper.

### ***Conclusion***


16. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Maria Veronica D. Ewald whose telephone number is 571-272-8519. The examiner can normally be reached on M-F, 8 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Yogendra Gupta can be reached on 571-272-1316. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1722

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

MVE



ROBERT DAVIS  
PRIMARY EXAMINER  
GROUP 1300/1700

7/21/06